Vermont State Health Plan
2005

Part 6: Data Summary and Appendices

Population Trends

At the time of the 2000 Census, the Vermont population was 608,827. Of that number, 96.8 percent was white. Among the non-white population, 37.4 percent was of mixed race (reporting two or more), 26.6 percent Asian, 15.6 percent black, 12.3 percent American Indian or Alaskan Native, and 8.1 percent "other." One percent reported its ethnicity as Hispanic or Latino. The non-white population in Vermont increased from 1.2 percent in 1990 to 3.2 percent in 2000. Data showed 35.8 percent of the non-white population and 28.4 percent of the Hispanic or Latino population resided in Chittenden County. Twenty-five percent of the American Indian or Alaskan native population resided in Franklin County.

Figure D-1
VT Population Distribution by Age

Age	2000 Population	2020 Projection
Under 20	27%	22%
20-44	35%	30%
45-64	25%	27%
65 and over	13%	21%

Population trends have been projected up to the year 2020.[1] Studies predict an increase in total population of about one half a percent per year, or a total increase over the 20-year period of 9.4 percent, to 666,041.

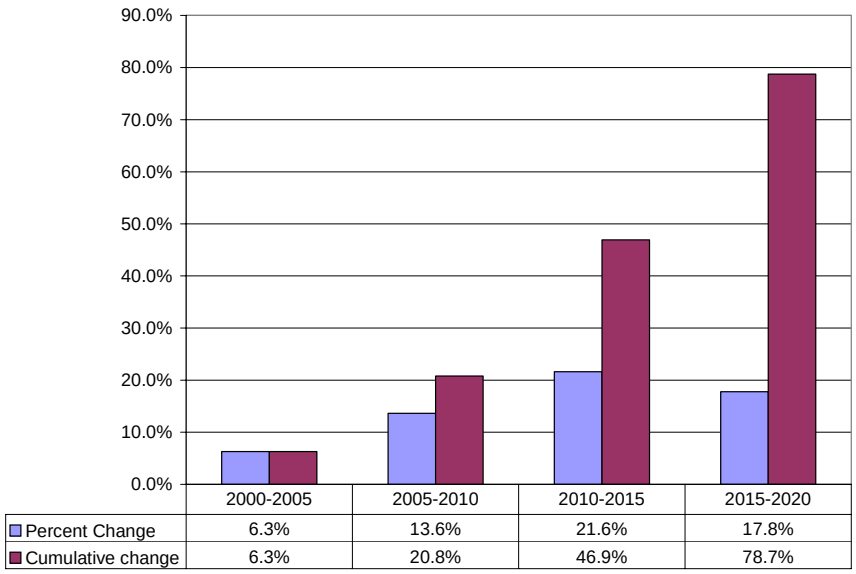
The make-up of the population will change considerably during that time, with 35,000 fewer people under the age of 45, 31,000 more between the ages of 45 and 64, and an increase of 61,000 in the number of those over the age of 65. By 2020, 21 percent of the Vermont population is projected to be over the age of 65, compared to 13 percent in 2000. (Figure D-1)

This increase in the proportion of the population that is 65 and older will have a significant impact on the need for health care services. In 2003, 88 percent of Vermonters (approximately 68,000 individuals) over the age of 65 indicated that they had one or more chronic conditions. Even if this proportion holds steady at 88 percent (an unlikely scenario given increases in obesity and little change in tobacco or physical activity measures), by 2020 nearly 122,000 Vermonters over the age of 65 will have one or more chronic diseases.

The proportion of people over age 65 is projected to increase in each five-year period until 2015, when it will decrease slightly. Still, there will be 78 percent more people over age 65 in 2020 than there were in 2000. (Figure DS-2) The number of people age 85 and over will also increase, from about 10,000 in 2000 to nearly 15,200 in 2020.

[1] Rayer, S. *Population Projections for Vermont, 2000-2020*. Massachusetts Institute for Social and Economic Research, 128 Thompson Hall, University of Massachusetts. Amherst, MA 01003.

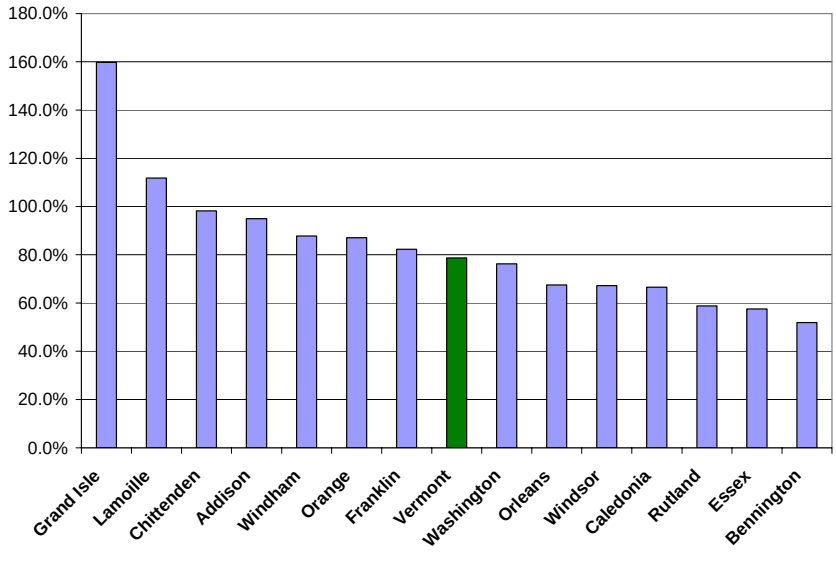
Figure D-2
Predicted Population Change
Vermonters 65 and older 2000-2020



	2000-2005	2005-2010	2010-2015	2015-2020
Percent Change	6.3%	13.6%	21.6%	17.8%
Cumulative change	6.3%	20.8%	46.9%	78.7%

The projected increase in the number of people over age 65 varies considerably by county, from an anticipated increase of nearly 160 percent in Grand Isle County to about 52 percent in Bennington County (Figure D-3). While this change will significantly increase the need for health care services throughout the state, the impact will be greatest in areas serving the residents of Grand Isle, Lamoille, Chittenden, and Addison counties. See Appendix F for detailed tables.

Figure D-3
Vermonters over age 65
Projected Population Increase by County 2000-2020



Health Status

The following sections address the extent to which Vermont has achieved the objectives set out in Healthy Vermonters 2010[2]. This document provides markers by which the state's health status and progress may be measured. These data provide some guidance in determining how health care services might be redistributed.

Access to Care

Healthy Vermonters 2010 includes several measures indicative of access to health services.

- The proportion of adults ages 18 - 64 with health insurance ranges from 81.6 percent in the Bennington area to 89.9 percent in the Burlington area.[3] The Healthy Vermonters 2010 objective is 100 percent.
- In three regions (Burlington, Bennington and White River Junction), the objective that 90 percent of women receive prenatal care in the first trimester is met.[4]
- The proportion of adults who saw a dentist in the past year is significantly worse than the objective of 83 percent, in all counties except Grand Isle.[5]

Health Behaviors

Measures of behavior include alcohol and tobacco use and overweight status.[6]

- All regions of Vermont failed to meet the Health Vermonters 2010 target objectives for binge drinking and smoking among adults.
- All regions of Vermont failed to meet Healthy Vermonters 2010 target objectives for binge drinking among youth.
- Only the Burlington and Middlebury areas meet the Healthy Vermonters 2010 objective of less than 16 percent for youth cigarette use in the past 30 days.
- The prevalence of overweight and obesity is higher than the objective in all regions of the state.

Preventive Health Services

- Vermont data are available on five measures of preventive health services needed by adults.[7]
- In all regions, the Healthy Vermonters 2010 objective for mammography screening for women age 40 or greater was met.

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[2] *Healthy Vermonters 2010*
[3] Vermont Department of Health. *Act 53, Community Needs Assessment Data by Hospital Region*. 2004.
[4] VDH. *Act 53, Community Needs Assessment Data*.
[5] VDH. Health Status Report '02. http://www.healthyvermonters.info/admin/pubs/healthstatus02/health2002.pdf
[6] VDH. *Act 53, Community Needs Assessment Data*.
[7] VDH. *Act 53, Community Needs Assessment Data*.

- No region met the target objectives for influenza or pneumoccocal immunization.
- Colorectal screening is somewhat more variable. There are two objectives, one related to the proportion of people over age 50 having had a sigmoidoscopy or colonoscopy, and the other the proportion ever having had a stool blood test. The Burlington and Bennington regions meet both objectives; Barre, Rutland, St. Johnsbury and Springfield regions meet neither; and the other areas meet one of the two objectives.

Mortality

While Vermont mortality data show somewhat more variability by county than is shown in the access, behavior or the preventive services sections above, these differences by themselves provide little guidance as to how services might be redistributed. In all counties, the death rate from diabetes-related causes is significantly higher than the Healthy Vermonters 2010 objective. Figure D-4 identifies the counties with death rates above the objective for several conditions. [8]

Figure D-4
Death Rates worse than the Healthy Vermonters 2010 Objectives – 2002

County	Colorectal Cancer	Lung Cancer	Diabetes	Heart Disease	Stroke	COPD*	Suicide
Addison	○		♦		○	♦	○
Bennington	♦	○	♦		♦	♦	♦
Caledonia	○		♦	○	○	♦	♦
Chittenden	♦	♦	♦	♦	○	♦	♦
Essex	○	♦	♦	♦		♦	♦
Franklin	♦	♦	♦	♦	○	♦	♦
Grand Isle	○	○	♦	○	○	○	
Lamoille	♦	○	♦	♦		♦	♦
Orange	♦	○	♦	♦	○	♦	♦
Orleans	♦	○	♦	♦	○	♦	♦
Rutland	♦	♦	♦	♦	♦	♦	♦
Washington	♦	♦	♦		♦	♦	♦
Windham	♦	♦	♦	○	○	♦	♦
Windsor	♦	○	♦		♦	♦	♦

* Chronic Obstructive Pulmonary (Lung) disease
Key: ♦ *significantly* worse than the objective
○ worse than the objective

[8] VDH. Health Status Report '02.

Workforce

The 2004 Healthcare Workforce Development Partnership, a task force made up of representatives from academia, health care organizations, businesses, public health, employment department, and the legislature, identified 20 of 54 health professions where recruitment and retention of qualified people is a problem in Vermont. These professions are listed in Figure D-5. While recruitment for these professions is a problem statewide, the problem is greater in rural areas. The 20 professions included in the report were selected because

- the vacancy rate was greater than 10 percent,
- the vacancy rate was less than 10 percent but the turnover rate was greater than 10 percent, or
- the turnover rate was less than 10 percent and national demand is expected to exceed supply in the future.

The Department of Health conducts biannual surveys of physicians, physician assistants and dentists. The resulting data show the distribution of these providers throughout the state. However, except with regard to physicians, there are no standards for assessing the adequacy of supply. The standards for physicians were developed in 1990, with suggested adjustments for changes in population demographics for 2000 and 2010. There has been no examination of these criteria to be sure the assumptions about population are still adequate, nor has there been an assessment of the effect of changes in health care technology, access to care, insurance coverage or other factors.

That said, the 2000 survey of physicians identified five counties with a severe need for additional primary care physicians based on these standards: Caledonia, Essex, Franklin, Grand Isle and Orange. Four counties had a limited need for additional physicians: Addison, Orleans, Rutland and Washington.

A survey of Vermont institutions that hire registered nurses, conducted in 2003, found 12 percent of positions vacant in hospitals and home health agencies and 19 percent vacant in nursing homes.

Figure D-5
Health Professions with the highest vacancy and/or turnover rates

- Dental assistant
- Dental hygienist
- Dentist
- Dietetic technician
- Licensed practical nurse
- Medical laboratory technician
- Medical laboratory technologist
- Occupational therapist
- Personal care attendant
- Pharmacist
- Pharmacy technician
- Physician: Primary care
- Physician: Specialty care
- Psychiatric nurse practitioner
- Psychiatrist: Adult
- Psychiatrist: Child
- Registered nurse
- Respiratory therapist
- Social worker
- Speech language pathologist

The dental health workforce, specifically dentists, is declining. A growing number of dentists are retiring from practice and fewer than 4400 are entering the profession each year to replace them. Between 1986 and 1993, a net of six dental

schools in the United States closed. New England sends fewer students to dental schools than any other region; Vermont has no dental school and has only one dental residency program, with few training slots. This limitation creates a dependency on the importation of people who are not originally from Vermont.

According to the 2003 Vermont Survey of Dentists, conducted biannually by the Department of Health, there were 367 dentists working in Vermont. Of these, 80 percent were primary care dentists, including 284 in general dentistry and 9 in pediatric dentistry; 194 of the dentists were aged 50 and older, and 129 of these were aged 55 and older. More than one-third of all dentists said they planned to retire within 10 years.

Vermont State Health Plan
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Part 6: Appendices

Appendix A: Authority

This document, "Vermont State Health Plan 2005," is authorized by Act 53 of 2003, "An Act Relating to Hospital and Health Care Systems Accountability, Capital Spending, and Annual Budgets." Act 53 amends 18 V.S.A. §9405(a) to read:

> "No later than January 1, 2005, the secretary of human services, in consultation with the commissioner [of the Vermont department of banking, insurance, securities and health care administration] and health care professionals and after receipt of public comment, shall adopt a state health plan that sets forth the health goals and values for the state… The plan shall include health promotion, health protection, nutrition, and disease prevention priorities for the state, identify available human resources as well as human resources needed for achieving the state's health goals and the planning required to meet those needs, and identify geographic parts of the state needing investments of additional resources in order to improve the health of the population. The plan shall contain sufficient detail to guide development of the state health resource allocation plan. Copies of the plan shall be submitted to members of the senate and house committees on health and welfare no later than January 15, 2005."

Appendix B: Other Health Plans

The following state plans are included in the State Health Plan by reference as if set out in full:

Arthritis: The Vermont Arthritis Plan (publication expected in December, 2004)

Asthma: Vermont Asthma Prevention Plan (2003)
www.healthyvermonters.info/hs/epi/cdepi/asthma/stateasthmaplan.pdf

Cancer: The Vermont Cancer Control Plan (publication expected in June, 2005)

Developmental Disabilities: State System of Care Plan for Developmental Services. July 2004
http://www.ddmhs.state.vt.us/docs/ds/dsSCPFy05-Fy07.pdf

Diabetes: The Vermont Diabetes Control Plan (1998)
www.healthyvermonters.info/hi/diabetes/pubs/diabctrl.shtml

Heart Disease: The Vermont Cardiovascular Disease and Stroke Plan (2004)
www.healthyvermonters.info/admin/pubs/misc/112904CardiovascularPlanDraft.pdf)

Injury: The Vermont Injury Prevention Plan (2001)
www.healthyvermonters.info/hi/healthpromo/pubs/2001/injuryplan.shtml

Oral Health: The Vermont Oral Health Plan (publication expected in January, 2005)
http://www.healthyvermonters.info/hi/dentalhealth/OralHealthPlanDraft.pdf

Health Disparities: Reducing Health Disparities (publication expected in Summer, 2005)

Mental Health: Statewide System of Care Plan for Adult Mental Health in Vermont April 2002
http://www.ddmhs.state.vt.us/docs/adult/mhadultSOCPlan0204.doc

Mental Health: State System of Care Plan for Child, Adolescent and Family Mental Health. April 2004
http://www.ddmhs.state.vt.us/docs/cafu/MHkidsSOC2004.pdf

Substance Abuse: Drug Education, Treatment, Enforcement & Rehabilitation (2004)
http://www.state.vt.us/adap/deter/deter.htm

Tobacco: Vermont Best Practices To Cut Smoking Rates in Half by 2010 (2000)
www.healthyvermonters.info/hi/tobacco/pubs/tobacco2000.shtml

Vermont State Hospital: Recommendations for the Future of the Services Provided at the Vermont State Hospital: Strengthening the Continuum of Care for Vermonters with Mental Illness.

http://www.ahs.state.vt.us/vshfutures/CSreportMH050204.pdf

Appendix C: Hard Choices in Health Care

In "Hard Choices in Health Care 2002: What Vermonters are Thinking" the Commission on the Public's Health Care Values and Priorities conducted phone surveys and focus groups to determine attitudes and values related to health care.[9] The study identifies several areas of consensus among Vermonters that are important considerations for the Vermont State Health Plan. These include:

- Strong support for providing health insurance to elderly and low-income through Medicare and Medicaid.
- High level of commitment to the principle that all Vermonters get the health care they need, when they need it, regardless of ability to pay.
- Belief that those receiving taxpayer-funded health care should pay at least part of the cost.
- Strong consensus for public participation in any health care rationing decisions.

At the same time, the survey identified several issues open to deliberation, where there are conflicting feelings, or where attitudes are incompletely or poorly informed. These include: high priority is given to the conflicting goals of extending care to everyone *and* containing costs; end-of-life care, with a large minority believing that it is morally wrong for doctors to honor a patient's wishes to withhold care at the end of life; and, health insurance policies with limited benefits.

Issues that have the potential to stop the public dialog because Vermonters are sharply divided in their opinions are: containing costs by limiting care (rationing) and factors driving the cost of health care.

There are some limitations in using this report to guide the Vermont State Health Plan. The "use of care" questions were limited to respondent thoughts about low-income consumers, not about their own use of care, and the focus of the report is on access and payment and does not address quality of care or efficiency of care. Selected data items from this report are found in the table below.

Question and responses	2002 percent	1996 percent	Change Percent*
What are highest priorities for government? (top or above average)			
Make sure all Vermonters get the care they need	84	77	7*
Lower health care costs	81	70	11*
Make sure all children get the nutrition they need in early years	81	80	1
Reduce use of illegal drugs, especially heroin	79	--	
Improve schools and education	76	77	-1

[9] Commission on the Public's Health Care Values and Priorities. *Hard Choices in Health Care 2002: What Vermonters are Thinking*. http://www.bishca.state.vt.us/HcaDiv/second_rep_comm_on_PHCVP%20.pdf

Question and responses	2002 percent	1996 percent	Change Percent*
Why are health care costs so high?			
Prescription drug costs	84	--	
Excessive insurance company profits	77	69	8*
Runaway administrative costs	66	69	-3
Excessive doctors fees	60	57	3
Excessive hospital profits	60	52	8*
Limited competition among insurance companies	59	--	
Waste, fraud and abuse	59	62	-3
People with unhealthy lifestyles	58	61	-3
Not enough preventive care	55	57	-2
People go to doctors, hospitals when they don't need to	54	48	6
Lack of knowledge of costs of treatment options	52	--	
People use ED for non-emergency care	50	44	6
Greater use of expensive, new technologies	47	37	10*
Unnecessary tests due to fear of malpractice law suits	42	52	-10*
New requirements to cover mental health, chiropractic	33	--	
What to do about rising costs (first choice only)			
Increase taxes	34	28	6
Ration care	20	28	-8*
Ration care for those with taxpayer-supported insurance	19	24	-5
Cut back in other areas like education	13	12	1
How to improve Vermont's health care system			
Honor living wills	93	98	-5
Continue to regulate hospital costs	89	96	-7*
Sometimes require insurers to cover at-home care	88	92	-4
Uninsured use new, less expensive clinics instead of ED	85	89	-4
Limit malpractice awards	74	83	-9*
Allow families of terminally ill to stop care	66	69	-3
Provide incentives to join HMOs	63	75	-12*
Limit choice of MD/hospital for those with tax-supported insurance	39	40	
Limit care those with tax-funded insurance can receive	39	49	-10*
Who should develop rationing guidelines			
Elected officials, experts working with the public	74	--	
Elected officials and medical experts	16	--	
* Significant at 95% Confidence Interval (CI). The sampling error is $\pm$ 4 percent for percents between 40 and 60 percent at a 95% CI. For comparison of two years, change that is $\geq$ 7 percent is significant at 95% CI			

Appendix D: 40 Developmental Assets[10] TM

	Category	Asset Name and Definition
External Assets	**Support**	**1. Family Support**-Family life provides high levels of love and support.
		2. Positive Family Communication-Young person and her or his parent(s) communicate positively, and young person is willing to seek advice and counsel from parents.
		3. Other Adult Relationships-Young person receives support from three or more nonparent adults.
		4. Caring Neighborhood-Young person experiences caring neighbors.
		5. Caring School Climate-School provides a caring, encouraging environment.
		6. Parent Involvement in Schooling-Parent(s) are actively involved in helping young person succeed in school.
	Empowerment	**7. Community Values Youth**-Young person perceives that adults in the community value youth.
		8. Youth as Resources-Young people are given useful roles in the community.
		9. Service to Others-Young person serves in the community one hour or more per week.
		10. Safety-Young person feels safe at home, school, and in the neighborhood.
	Boundaries & Expectations	**11. Family Boundaries**-Family has clear rules and consequences and monitors the young person's whereabouts.
		12. School Boundaries-School provides clear rules and consequences.
		13. Neighborhood Boundaries-Neighbors take responsibility for monitoring young people's behavior.
		14. Adult Role Models-Parent(s) and other adults model positive, responsible behavior.
		15. Positive Peer Influence-Young person's best friends model responsible behavior.
		16. High Expectations-Both parent(s) and teachers encourage the young person to do well.
	Constructive Use of Time	**17. Creative Activities**-Young person spends three or more hours per week in lessons or practice in music, theater, or other arts.
		18. Youth Programs-Young person spends three or more hours per week in sports, clubs, or organizations at school and/or in the community.
		19. Religious Community-Young person spends one or more hours per week in activities in a religious institution.
		20. Time at Home-Young person is out with friends "with nothing special to do" two or fewer nights per week.

[10] Search Institute. *Developmental Assets.* www.search-institute.org. Copyright © 2004 by Search Institute SM, Minneapolis, MN.

	Category	Asset Name and Definition
Internal Assets	**Commitment to Learning**	**21. Achievement Motivation**-Young person is motivated to do well in school.
		22. School Engagement-Young person is actively engaged in learning.
		23. Homework-Young person reports doing at least one hour of homework every school day.
		24. Bonding to School-Young person cares about her or his school.
		25. Reading for Pleasure-Young person reads for pleasure three or more hours per week.
	Positive Values	**26. Caring**-Young person places high value on helping other people.
		27. Equality and Social Justice-Young person places high value on promoting equality and reducing hunger and poverty.
		28. Integrity-Young person acts on convictions and stands up for her or his beliefs.
		29. Honesty-Young person "tells the truth even when it is not easy."
		30. Responsibility-Young person accepts and takes personal responsibility.
		31. Restraint-Young person believes it is important not to be sexually active or to use alcohol or other drugs.
	Social Competencies	**32. Planning and Decision Making**-Young person knows how to plan ahead and make choices.
		33. Interpersonal Competence-Young person has empathy, sensitivity, and friendship skills.
		34. Cultural Competence-Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds.
		35. Resistance Skills-Young person can resist negative peer pressure and dangerous situations.
		36. Peaceful Conflict Resolution-Young person seeks to resolve conflict nonviolently.
	Positive Identity	**37. Personal Power**-Young person feels he or she has control over "things that happen to me."
		38. Self-Esteem-Young person reports having high self-esteem.
		39. Sense of Purpose-Young person reports that "my life has a purpose."
		40. Positive View of Personal Future-Young person is optimistic about her or his personal future.

Appendix E: NHTSA Standards for Emergency Medical Services

Regulation and policy

To provide a quality, effective system of emergency medical care, each EMS system must have in place comprehensive enabling legislation with provision for a lead EMS agency. This agency has the authority to plan and implement an effective EMS system, and to promulgate appropriate rules and regulations for each recognized component of the EMS system (authority for statewide coordination; standardized treatment, transport, communication and evaluation, including licensure of out-of-hospital services and establishment of medical control; designation of specialty care centers; and Public Information Education and Relations (PIER) program). There is a consistent, established funding source to adequately support the activities of the lead agency and other essential resources that are necessary to carry out the legislative mandate. The lead agency operates under a single, clear management structure for planning and policy setting, but strives to achieve consensus among EMS constituency groups in formulating public policy, procedures and protocols. The role of any local/regional EMS agency or council who are charged with implementing EMS policies is clearly established, as well as their relationship to the lead agency. Supportive management elements for planning and developing effective statewide EMS systems include the presence of a formal state EMS Medical Director, a Medical Advisory Committee for review of EMS medical care issues and state EMS Advisory Committee (or Board). The EMS Advisory Committee has a clear mission, specified authority and representative membership from all disciplines involved in the implementation of EMS systems.

Resource management

Central coordination and current knowledge (identification and categorization) of system resources is essential to maintain a coordinated response and appropriate resource utilization within an effective EMS system. A comprehensive State EMS plan exists that is based on a statewide resource assessment and updated as necessary to guide EMS system activities. A central statewide data collection (or management information) system is in place that can properly monitor the utilization of EMS resources; data is available for timely determination of the exact quantity, quality, distribution and utilization of resources. The lead agency is adequately staffed to carry out central coordination activities and technical assistance. There is a program to support recruitment and retention of EMS personnel, including volunteers.

Human resources and training

EMS personnel can perform their mission only if adequately trained and available in sufficient numbers throughout the State. The State EMS lead agency has a mechanism to assess current manpower needs and establish a comprehensive plan for stable and consistent EMS training programs with effective local and regional support. At a minimum, all transporting out-of-hospital emergency medical care personnel are trained to the EMT-Basic level, and out-of-hospital training programs utilize a standardized curriculum for each level of EMS personnel (including EMS dispatchers). EMS training programs and instructors are routinely monitored, instructors meet certain requirements, the curriculum is standardized throughout the State, and valid and reliable testing procedures are utilized. In addition, the State lead agency has standardized, consistent policies and procedures for certification (and re-certification) of

personnel, including standards for basic and advanced level providers, as well as instructor certification. The lead agency ensures that EMS personnel have access to specialty courses such as ACLS, PALS, BTLS, PHTLS, ATLS, etc., and a system of critical incident stress management has been implemented.

Transportation

Safe, reliable ambulance transportation is a critical component of an effective EMS system. The transportation component of the State EMS plan includes provisions for uniform coverage, including a protocol for air medical dispatch and a mutual aid plan. This plan is based on a current, formal needs assessment of transportation resources, including the placement and deployment of all out-of-hospital emergency medical care transport services. There is an identified ambulance placement or response unit strategy, based on patient need and optimal response times. The lead agency has a mechanism for routine evaluation of transport services and the need for modifications, upgrades or improvements based on changes in the environment (i.e., population density). Statewide, uniform standards exist for inspection and licensure of all modes of transport (ground, air, water) as well as minimum care levels for all transport services (minimum staffing and credentialing). All out-of-hospital emergency medical care transport services are subject to routine, standardized inspections, as well as spot checks to maintain a constant state of readiness throughout the State. There is a program for the training and certification of emergency vehicle operators.

Facilities

It is imperative that the seriously ill patient be delivered in a timely manner to the closest appropriate facility. The lead agency has a system for categorizing the functional capabilities of all individual health care facilities that receive patients from the out-of-hospital emergency medical care setting. This determination should be free of political considerations, is updated on an annual basis and encompasses both stabilization and definitive care. There is a process for verification of the categorizations (i.e., on-site review). This information is disseminated to EMS providers so that the capabilities of the facilities are known in advance and appropriate primary and secondary transport decisions can be made. The lead agency also develops and implements out-of-hospital emergency medical care triage and destination policies, as well as protocols for specialty care patients (such as severe trauma, burns, spinal cord injuries and pediatric emergencies) based on the functional assessment of facilities. Criteria are identified to guide interfacility transport of specialty care patients to the appropriate facilities. Diversion policies are developed and utilized to match system resources with patient needs; standards are clearly identified for placing a facility on bypass or diverting an ambulance to another facility. The lead agency has a method for monitoring if patients are directed to appropriate facilities.

Communications

A reliable communications system is an essential component of an overall EMS system. The lead agency is responsible for central coordination of EMS communications (or works closely with another single agency that performs this function) and the state EMS plan contains a component for comprehensive EMS communications. The public can access the EMS system with a single, universal emergency phone number, such as 9-1-1 (or preferably Enhanced 9-1-1), and the communications system provides for prioritized dispatch. There is a common, statewide radio system that allows for direct communication between all providers (dispatch to ambulance

communication, ambulance to ambulance, ambulance to hospital, and hospital to hospital communications) to ensure that receiving facilities are ready and able to accept patients. Minimum standards for dispatch centers are established, including protocols to ensure uniform dispatch and standards for dispatcher training and certification. There is an established mechanism for monitoring the quality of the communication system, including the age and reliability of equipment.

Public information, education and prevention

To effectively serve the public, each State must develop and implement an EMS public information, education and prevention (PIEP) program. The PIEP component of the State EMS plan ensures that consistent, structured PI&E programs are in place that enhance the public's knowledge of the EMS system, support appropriate EMS system access, demonstrate essential self-help and appropriate bystander care actions, and encourage injury prevention. The PIEP plan is based on a needs assessment of the population to be served and an identification of actual or potential problem areas (i.e., demographics and health status variable, public perceptions and knowledge of EMS, type and scope of existing PIEP programs). There is an established mechanism for the provision of appropriate and timely release of information on EMS-related events, issues and public relations (damage control). The lead agency dedicates staffing and funding for these programs, which are directed at both the general public and EMS providers. The lead agency enlists the cooperation of other public service agencies in the development and distribution of these programs, and serves as an advocate for legislation that potentially results in injury/illness prevention.

Medical direction

EMS is a medical care system that involves medical practice as delegated by physicians to non-physician providers who manage patient care outside the traditional confines of office or hospital. As befits this delegation of authority, the system ensures that physicians are involved in all aspects of the patient care system. The role of the State EMS Medical Director is clearly defined, with legislative authority and responsibility for EMS system standards, protocols and evaluation of patient care. A comprehensive system of medical direction for all out-of-hospital emergency medical care providers (including BLS) is utilized to evaluate the provision of medical care as it relates to patient outcome, appropriateness of training programs and medical direction. There are standards for the training and monitoring of direct medical control physicians, and statewide, standardized treatment protocols. There is a mechanism for concurrent and retrospective review of out-of-hospital emergency medical care, including indicators for optimal system performance. Physicians are consistently involved and provide leadership at all levels of quality improvement programs (local, regional, state).

Trauma systems

To provide a quality, effective system of trauma care, each State must have in place a fully functional EMS system; trauma care components must be clearly integrated with the overall EMS system. Enabling legislation should be in place for the development and implementation of the trauma care component of the EMS system. This should include trauma center designation (using ACS-COT, ACEP, APSA-COT and/or other national standards as guidelines), triage and transfer guidelines for trauma patients, data collection and trauma registry definitions and mechanisms, mandatory autopsies and quality improvement for trauma patients. Information

and trends from the trauma registry should be reflected in injury prevention programs. Rehabilitation is an essential component of any statewide trauma system and hence these services should also be considered as part of the designation process. The statewide trauma system (or trauma system plan) reflects the essential elements of the Model Trauma Care System Plan.

Evaluation

A comprehensive evaluation program is needed to effectively plan, implement and monitor a statewide EMS system. The EMS system is responsible for evaluating the effectiveness of services provided victims of medical or trauma related emergencies, therefore the EMS agency should be able to state definitively what impact has been made on the patients served by the system. A uniform, statewide out-of-hospital data collection system exists that captures the minimum data necessary to measure compliance with standards (i.e., a mandatory, uniform EMS run report form or a minimum set of data that is provided to the state); data are consistently and routinely provided to the lead agency by all EMS providers and the lead agency performs routine analysis of this data. Pre-established standards, criteria and outcome parameters are used to evaluate resource utilization, scope of services, effectiveness of policies and procedures, and patient outcome. A comprehensive, medically directed, statewide quality improvement program is established to assess and evaluate patient care, including a review of process (how EMS system components are functioning) and outcome. The quality improvement program should include an assessment of how the system is currently functioning according to the performance standards, identification of system improvements that are needed to exceed the standards and a mechanism to measure the impact of the improvements once implemented. Patient outcome data is collected and integrated with health system, emergency department and trauma system data; optimally there is linkage to databases outside of EMS (such as crash reports, FARS, trauma registry, medical examiner reports and discharge data) to fully evaluate quality of care. The evaluation process is educational and quality improvement/system evaluation findings are disseminated to out-of-hospital emergency medical care providers. The lead agency ensures that all quality improvement activities have legislative confidentiality protection and are non-discoverable.

Appendix F: Population Projections

Vermont: State Age Population Projections 2000-2020[11]

Age Group	Census 2000	Projection 2005	Projection 2010	Projection 2015	Projection 2020
0-4	33,989	33,353	33,407	35,040	36,091
5-9	41,101	34,498	33,683	33,775	35,514
10-14	45,397	42,279	35,439	34,455	34,573
15-19	45,770	52,043	48,895	41,988	40,962
20-24	37,852	48,175	54,114	51,141	44,544
25-29	34,182	28,342	37,857	43,498	40,729
30-34	40,385	34,163	27,994	37,791	43,692
35-39	49,376	42,568	35,840	29,187	39,845
40-44	52,513	50,460	43,480	36,507	29,631
45-49	50,107	52,747	50,670	43,674	36,640
50-54	43,725	49,900	52,555	50,539	43,594
55-59	32,603	43,184	49,402	52,145	50,259
60-64	24,317	31,825	42,267	48,562	51,427
65-69	21,126	23,146	30,421	40,586	46,862
70-74	19,557	19,196	21,166	28,003	37,603
75-79	15,930	16,596	16,427	18,283	24,411
80-84	10,901	12,187	12,819	12,853	14,481
85+	9,996	11,272	12,807	14,173	15,184

Vermont: County Age 65+ Population Projections 2000-2020

County / Year	Census 2000	Projection 2005	Projection 2010	Projection 2015	Projection 2020
Addison	4065	4346	5067	6352	7926
Bennington	6167	6448	7067	8121	9368
Caledonia	4272	4421	4811	5815	7116
Chittenden	13780	15000	17452	21850	27316
Essex	981	1042	1192	1370	1545
Franklin	5004	5333	6117	7405	9122
Grand Isle	850	1036	1323	1707	2208
Lamoille	2638	2967	3547	4495	5587
Orange	3612	3918	4506	5570	6758
Orleans	3952	4211	4761	5574	6620
Rutland	9480	9782	10821	12729	15059
Washington	7463	7801	8708	10772	13150
Windham	6173	6578	7588	9419	11594
Windsor	9073	9514	10679	12719	15173
Vermont	77510	82398	93639	113898	138541

[11] Rayer, S. *Population Projections for Vermont.*